

CLAIMS

1. A system for transmitting internal messages in a local network while maintaining message synchronism, comprising:

multiple sending computer units (CPUs), each for running at least one sending application process for sending an internal message, said message being sent to two or more recipients, and

multiple receiving computer units (CPUr), each for running at least one receiving application process for receiving a sent internal message, at least two copies of each receiving application process residing in said receiving computer units,

characterized in, that the system further comprises:

one interface unit (IF) per one or more computer units for buffering and relaying messages sent to and from the corresponding computer units,

multiple external links (SrL), each for linking a computer unit to its corresponding interface unit, and

an internal interconnecting device (IxD) for receiving messages relayed by the interface units corresponding to the sending computer units, and for forwarding each received message to the interface units corresponding to the respective receiving computer units one received message at a time, said interconnecting device internally coupled with the interface units.

2. The system according to claim 1, characterized in that each interface unit further comprises:

a transmitting buffer (TX) for storing one or more message to be sent until processed by the interconnecting device, and

a receiving buffer (RX) for storing one or more received messages until processed by the corresponding computer unit.

3. The system according to claim 1, characterized in that messages are sent as multicasts by the sending application process.

4. The system according to claim 1, characterized in that messages sent and received by application processes running in the same computer unit are routed via the interconnecting device.

5. The system according to claim 1, characterized in that the interconnecting device is an internal bus.

6. The system according to claim 1, characterized in that the interconnecting device is a crossbar.

7. The system according to claim 1, characterized in that the interconnecting device and the interface units coupled to it are implemented as a modified LAN switch.

8. A system for transmitting internal messages in a local network while maintaining message synchronism, comprising:

multiple sending computer units (CPUs), each for running at least one sending application process for sending an internal message, said message being sent to two or more recipients using group addressing, and

multiple receiving computer units (CPUr), each for running at least one receiving application process for receiving a sent internal message, at least two copies of each receiving application process residing in said receiving computer units,

characterized in, that the system further comprises:

multiple multiplexer units (MUX), each for collecting messages from and distributing messages to one or more sending computer units,

one interface unit (IF) per one or more multiplexer units for buffering and relaying messages sent to and from the corresponding multiplexer units, and

an internal interconnecting device (IxD) for receiving messages relayed by the interface units corresponding to the sending computer units, and for forwarding each received message to the interface units corresponding to the respective receiving computer units one received message at a time, said interconnecting device internally coupled with the interface units.

9. The system according to claim 8, characterized in that each interface unit further comprises:

a transmitting buffer (TX) for storing one or more message to be sent until processed by the interconnecting device, and

a receiving buffer (RX) for storing one or more received messages until processed by the corresponding multiplexer unit.

10. The system according to claim 8 characterized in that messages are sent as multicasts by the sending application process.

11. The system according to claim 8, characterized in that messages sent and received by application processes running in the same computer unit are routed via the interconnecting device.

12. The system according to claim 8, characterized in that the interconnecting device is an internal bus.

13. The system according to claim 8, c h a r a c t e r i z e d in that the interconnecting device is a crossbar.

14. The system according to claim 8, c h a r a c t e r i z e d in that the interconnecting device, the interface units coupled to it and the multiplexer units are implemented as modified LAN switches.

15. The system according to claim 8, c h a r a c t e r i z e d in that a multiplexer unit is connected to an interface unit via another multiplexer unit.